Patent Assignment Abstract of Title

Total Assignments: 1

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Inventors: Ursula Murschall, Herbert Peiffer, Gottfried Hilkert, Hans Mahl

Title: White, biaxially oriented, flame-retardant and UV-resistant polyester film with cycloolefin copolymer, its use and process for its production

Assignment: 1

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Application #: 09781722 **Filing Dt:** 02/12/2001 **Patent #:** NONE **Issue Dt:**

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Inventors: Ursula Murschall, Herbert Peiffer, Gottfried Hilkert, Klaus Oberlaender

Title: WHITE, BIAXIALLY ORIENTED, FLAME-RETARDANT POLYESTER FILM WITH CYCI COPOLYMER, ITS USE AND PROCESS FOR ITS PRODUCTION

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Application #: 09791447 **Filing Dt:** 02/23/2001 **Patent #:** NONE **Issue Dt:**

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Inventors: Herbert Peiffer, Gottfried Hilkert, Bart Janssens

Title: High-whiteness, biaxially oriented polyester film, its use and process for its production

Assignment: 1

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Application #: 09781802 **Filing Dt:** 02/12/2001 **Patent #:** NONE **Issue Dt:**

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Inventors: Ursula Murschall, Herbert Peiffer, Gottfried Hilkert, Richard Lee Davis

Title: WHITE, BIAXIALLY ORIENTED AND UV-RESISTANT POLYESTER FILM WITH CYCLOOLEFIN COPOLYMER (COC), ITS USE AND PROCESS FOR ITS PRODUCTION

Assignment: 1

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Assignors: MURSCHALL, URSULA **Exec Dt:** 12/19/2000

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DOCUMENT-IDENTIFIER: US 20020160215 A1

TITLE: High-whiteness, biaxially oriented polyester film, its use and process for its production

PUBLICATION-DATE: October 31, 2002

INVENTOR-INFORMATION:

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US-CL-CURRENT: 428/480, 264/173.18 , 264/210.7 , 428/910

CLAIMS:

What is claimed is:

1. A high-whiteness, biaxially oriented polyester film comprising at least a base layer made from polyester, wherein at least the base layer comprises from about 2 to about 60% by weight of cycloolefin copolymer (COC) and from about 0.1 to about 25% by weight of at least one white pigment, based on the weight of this layer, where the glass transition temperature of the COC is within the range from about 70 to about 270.degree. C.

2. The high-whiteness polyester film as claimed in claim 1, wherein the base layer also comprises up to 5% by weight of an optical brightener.

3. The high-whiteness polyester film as claimed in claim 1, wherein the COC contains monomer units selected from the group consisting of norbornene, dimethyloctahydronaphthalene, cyclopentene and 5-methylnorbornene.

4. The high-whiteness polyester film as claimed in claim 1, wherein the glass transition temperature of the COC is within the range from about 90 to about 250.degree. C.

5. The high-whiteness polyester film as claimed in claim 4, wherein the glass transition temperature of the COC is within the range from about 110 to about 220.degree. C.

6. The high-whiteness polyester film as claimed in claim 1, wherein the film exhibits a whiteness of more than about 80%.

7. The high-whiteness polyester film as claimed in claim 1, wherein the film exhibits an opacity of more than about 55%.

8. The high-whiteness polyester film as claimed in claim 1, wherein the film exhibits a gloss of more than about 10.

9. The high-whiteness polyester film as claimed in claim 1, wherein an outer layer has been arranged on the COC-containing layer.

10. The high-whiteness polyester film as claimed in claim 9, wherein an intermediate layer has been arranged between the COC-containing layer and the outer layer.

11. A process for producing a high-whiteness polyester film as claimed in claim 1, in which the melt corresponding to a single-layer film or the melts corresponding to the individual layers of the film are extruded or coextruded through a flat-film die, the resultant film is drawn off on one or more rolls for solidification, the film is then biaxially stretched (oriented), and the biaxially stretched film is he at-set and, if desired, corona-or flame-treated on the surface intended for treatment, which comprises carrying out the biaxial orientation in succession, first orienting longitudinally and then transversely, the temperature during the longitudinal stretching being within the range from about 80 to about 130.degree. C. and that during the transverse stretching being within the range from about 90 to about 150.degree. C., and the longitudinal stretching ratio being within the range from about 2.5:1 to about 6:1, and this transverse stretching ratio being within the range from about 3.0:1 to about 5.0:1.

12. A process for producing the high-whiteness polyester film as claimed in claim 1, in which the melt corresponding to a single-layer film or the melts corresponding to the individual layers of the film are extruded or coextruded through a flat-film die, the resultant film is drawn off on one or more rolls for solidification, the film is then biaxially stretched (oriented), and the biaxially stretched film is heat-set and, if desired, corona-or flame-treated on the surface intended for treatment, which comprises carrying out the orientation in a simultaneous stretching frame, the stretching temperatures being .ltoreq.125.degree. C.

13. The process as claimed in claim 11 or 12, wherein, for heat-setting, the oriented film is held for from about 0.1 to about 10 s at a temperature within the range from about 150 to about 250.degree. C., then cooled and then wound up.

14. The process as claimed in claim 11 or 12, wherein, to establish other desired properties, at least one of the surfaces of the film is chemically treated or corona-or flame-treated, the intensity of the treatment being set so that the surface tension of the film is above about 45 mN/m.

15. The process as claimed in claim 11, wherein, to establish other properties, the film is coated with a coating which has adhesion-promoting, antistatic, slip-improving or release action, this additional coating being applied to the film by in-line coating using aqueous dispersions after the longitudinal stretching and before the transverse stretching.

16. The process as claimed in claims 11 or 12, wherein, based on the total

weight of the film, from about 10 to about 70% by weight of regrind directly associated with production of the film is added to the film.

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DOCUMENT-IDENTIFIER: US 20020160215 A1

TITLE: High-whiteness, biaxially oriented polyester film, its use and process for its production

PUBLICATION-DATE: October 31, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
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ABSTRACT:

The present invention relates to a high-whiteness, biaxially oriented polyester film with at least a base layer made from polyester. The base layer of the polyester film of the invention also comprises from 2 to 60% by weight of a cycloolefin copolymer (COC), from 0.1 to 25% by weight of a white pigment, and, if desired, from 0 to 5% by weight of an optical brightener, based on the weight of the base layer. The glass transition temperature of the COC here is to be within the range from 70 to 270.degree. C. The film is particularly suitable for packing foods or other consumable items which are sensitive to light and/or to air, or for use in industry, e.g. for producing hot-stamping foils or as a label film, or for image-recording papers, printed sheets, or magnetic recording cards, or for processing on high-speed machinery for winding, metallizing, printing or laminating.